

REPORT ON ELECTRIC LIGHTING INSTALLATION. No. 1472

Port of Shanghai Date of First Survey 1.5.14 Date of Last Survey 27.6.14 No. of Visits 10
 No. in Reg. Book on the ~~Iron~~ Steel Screw Towboat "Kailan" Port belonging to Shanghai
 Built at Shanghai By whom Kiangnan Dock & Dry Works When built 1914
 Owners Kailan Mining Administration Owners' Address London
 Yard No. 122 Electric Light Installation fitted by Kiangnan Dock & Dry Works When fitted 1914

DESCRIPTION OF DYNAMO, ENGINE, ETC.

One direct coupled compound wound dynamo fitted on base plate with a vertical open front single cylinder steam engine.

Capacity of Dynamo 22 Amperes at 100 Volts, whether continuous or alternating current Continuous
 Where is Dynamo fixed in Engine Room Whether single or double wire system is used Double wire
 Position of Main Switch Board Aft Engine Room Bulkhead having switches to groups five of lights, &c., as below
 Positions of auxiliary switch boards and numbers of switches on each. Two distribution boards fitted.

If cut outs are fitted on main switch board to the cables of main circuit Yes and on each auxiliary switch board to the cables of auxiliary circuits Yes and at each position where a cable is branched or reduced in size and to each lamp circuit

If vessel is wired on the double wire system are cut outs fitted to both flow and return wires or cables of all circuits including lamp circuits Yes

Are the cut outs of non-oxidizable metal Yes and constructed to fuse at an excess of 50 per cent over the normal current

Are all cut outs fitted in easily accessible positions Yes Are the fuses of standard dimensions Yes If wire fuses are used are permanent instructions fitted on or near each switch board giving particulars of proper size of fuse for each circuit

Are all switches and cut-outs constructed of incombustible materials and fitted on incombustible bases Yes

Total number of lights provided for 49 arranged in the following groups:—

A	Search light	lights each of		candle power requiring a total current of	<u>10</u>	Amperes
B	Running lights	lights each of	<u>4 - 16</u>	candle power requiring a total current of	<u>.8</u>	Amperes
C	Forward	lights each of	<u>15 - 16</u>	candle power requiring a total current of	<u>3.0</u>	Amperes
D	Engine Room	lights each of	<u>11 - 16</u>	candle power requiring a total current of	<u>2.2</u>	Amperes
E	Aft	lights each of	<u>12 - 16</u>	candle power requiring a total current of	<u>2.4</u>	Amperes
	Two Mast head light with	1 lamps each of	<u>16</u>	candle power requiring a total current of	<u>.4</u>	Amperes
	Two Side light with	1 lamps each of	<u>16</u>	candle power requiring a total current of	<u>.4</u>	Amperes
	One Cargo lights of	<u>3 - 16</u>		candle power, whether incandescent or arc lights	<u>incandescent</u>	

If are lights, what protection is provided against fire, sparks, &c.

Where are the switches controlling the masthead and side lights placed in Wheel House.

DESCRIPTION OF CABLES.

Main cable carrying	<u>22</u> Amperes, comprised of	<u>7</u> wires, each	<u>16</u> L.S.G. diameter,	<u>.0225</u> square inches total sectional area
Branch cables carrying	Amperes, comprised of	<u>1</u> wires, each	<u>16</u> L.S.G. diameter,	<u>.0032</u> square inches total sectional area
Branch cables carrying	Amperes, comprised of	<u>7</u> wires, each	<u>21</u> L.S.G. diameter,	<u>.056</u> square inches total sectional area
Leads to lamps carrying	Amperes, comprised of	<u>1</u> wires, each	<u>18</u> L.S.G. diameter,	<u>.0018</u> square inches total sectional area
Cargo light cables carrying	Amperes, comprised of	<u>23</u> wires, each	<u>36</u> L.S.G. diameter,	<u>.001</u> square inches total sectional area

DESCRIPTION OF INSULATION, PROTECTION, ETC.

Insulated with pure para rubber, two coats vulcanizing rubber + IR taped, the whole vulcanized together then lead covered.

Joints in cables, how made, insulated, and protected No joints

Are all the joints of cables thoroughly soldered, resin only having been used as a flux Are all joints in accessible positions, none being made in bunkers, cargo spaces, or spaces which may at any time be used for carrying cargo, stores, or baggage

Are there any joints in or branches from the cable leading from dynamo to main switch board No

How are the cables led through the ship, and how protected Lead covered wires in tubes in places



DESCRIPTION OF INSULATION, PROTECTION, ETC.—continued.

Are they in places always accessible Yes

What special protection has been provided for the cables in open alleyways or where exposed to weather or moisture Lead covering.

What special protection has been provided for the cables near galleys or oil lamps or other sources of heat Tubes

What special protection has been provided for the cables near boiler casings Tubes

What special protection has been provided for the cables in engine room None required.

How are cables carried through beams Holes lead sheathed through bulkheads, &c. lead sheathed

How are cables carried through decks Tubes

Are any cables run through coal bunkers No or cargo spaces Yes or spaces which may be used for carrying cargo, stores, or baggage Yes

If so, how are they protected Tubes

Are any lamps fitted in coal bunkers or spaces which may at times be used for cargo, coals, or baggage No

If so, how are the lamp fittings and cable terminals specially protected ✓

Where are the main switches and cut outs for these lights fitted ✓

If in the spaces, how are they specially protected ✓

Are any switches or cut outs fitted in bunkers ✓

Cargo light cables, whether portable or permanently fixed Portable How fixed ✓

In vessels fitted on the single wire system, how is the dynamo terminal fixed to the hull of vessel ✓

How are the returns from the lamps connected to the hull ✓

Are all the joints with the hull in accessible positions ✓

The installation is supplied with a voltmeter and an amperemeter, fixed on Switchboard

VESSELS BUILT FOR CARRYING PETROLEUM.

In vessels built for carrying petroleum, are all switches and cut-outs fitted in positions not liable to the accumulation of petroleum vapour or gas

Are any switches, cut outs, or joints of cables fitted in the pump room or companion

How are the lamps specially protected in places liable to the accumulation of vapour or gas

The copper used is guaranteed to have a conductivity of 100 per cent. that of pure copper.

Insulation of cables is guaranteed to have a resistance of not less than 2500 megohms per statute mile after 24 hours' immersion in seawater.

The foregoing statements are a correct description of the Electric Light installation fitted by us on this vessel and we declare that it is at this date in good order and safe working condition.

R. B. Manchaw Electrical Engineers Date 29/6/14

COMPASSES.

Distance between dynamo or electric motors and standard compass ✓

Distance between dynamo or electric motors and steering compass ✓

The nearest cables to the compasses are as follows:—

A cable carrying	<u>10</u>	Amperes	<u>10</u>	feet from standard compass	<u>Only when search light is used</u>	feet from steering compass
A cable carrying	<u>.2</u>	Amperes	<u>6</u>	feet from standard compass	<u>✓</u>	feet from steering compass
A cable carrying		Amperes		feet from standard compass		feet from steering compass

Have the compasses been adjusted with and without the electric installation at work at full power No

The maximum deviation due to electric currents, etc., was found to be _____ degrees on _____ course in the case of the standard compass and _____ degrees on _____ course in the case of the steering compass.

R. B. Manchaw Builder's Signature. Date 29/6/14

GENERAL REMARKS.

The installation has been fitted according to the Rules and was tried under working conditions and found satisfactory

It is submitted that this vessel is eligible for

THE RECORD, Elec. light.

H. H. Fletcher
28/7/14

Surveyor to Lloyd's Register of British and Foreign Shipping.

Committee's Minute WED. AUG. -5. 1914

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